

Remarks/Arguments

Claims 1-4 were rejected under 35 U.S.C § 103 as being unpatentable over Nomi (US 4,368,766) in view of von Fragstein et al (US 6,261,678).

Applicants respectfully submit that the examiner did not establish a *prima facie* case of obviousness under MPEP § 2142-2143. Even if we accept the Examiner's position (p 4, lines 14-18 of Office Action) that both the Nomi and the von Fragstein references are reasonably pertinent to the particular problem with which Applicants are concerned (a questionable assumption because the von Fragstein reference is directed to laminates for garments and for industrial separation processes), what is also needed to establish a *prima facie* case of obviousness is a motivation to combine the two. Examiner suggests that the motivation to substitute layer (b) of von Fragstein's laminate for Nomi's porous membrane stems from von Fragstein's teachings that layer (b) provides resistance to contaminants while still providing water vapor permeability. Applicants respectfully submit that the teachings of von Fragstein do not provide such a motivation. Von Fragstein teaches how to impart resistance to contaminants, especially oil contaminants, to layer (a), that is, to the microporous layer which is on the outside surface of his laminate. He achieves resistance to oil contaminants by treatment of layer (a) with oleophobic fluorocarbon compounds. There is no teaching in von Fragstein that non-porous layer (b) contributes resistance to oil contaminants or any other type of contaminant. Von Fragstein is concerned with protecting layer (a) against oil contaminants, because layer (a) is on the outside surface of his laminate. The purpose for layer (b) in von Fragstein's laminate is to provide an air impermeable layer which is also water vapor permeable (col 2, line 38-39), not to contribute contamination resistance. This point is clearly illustrated in example 1 of von Fragstein, which shows that unless layer (a) is treated with a fluorocarbon compound the oil resistance rating of the laminate is zero. This indicates that layer (b) does not contribute contamination resistance to von Fragstein's laminate.

Another reason why the person skilled in the art would not be motivated to replace Nomi's microporous PTFE with von Fragstein's layer (b) is that they transmit water by a totally different mechanism. Contrary to what the examiner states (p 3, line 17-18 of Office Action), Nomi's microporous PTFE does not have the ability to transmit water by a solution/ diffusion mechanism. The cooling effect produced by water transport through a microporous membrane of the type described by Nomi and the possibility to fabricate self-cooling containers from such materials has been previously recognized, not so for solution/diffusion membranes. There is no reference in von Fragstein to any type of container or any type of cooling. Bacteria imperviousness is not even mentioned and would be completely irrelevant given von Fragstein's targeted applications.

Thus, there is no suggestion in the von Fragstein's reference that might lead the person skilled in the art to substitute von Fragstein's vapor permeable layer (b) for Nomi's microporous membrane. The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See MPEP 2143.01 (III). The desirability of the combination is not suggested. Such suggestion can only be derived from the hindsight knowledge of Applicants' own disclosure. The use of such hindsight knowledge to support an obviousness rejection under 35 USC §103 is impermissible. See *W L Gore and Assocs, Inc, v Garlock, Inc*, 721 F.2d 1553, 220 USPQ at 312-313.

Applicants therefore respectfully submit that there are no benefits suggested in von Fragstein that might prompt the person skilled in the art to replace Nomi's microporous membrane with von Fragstein's non-porous vapor permeable layer (b), and that a *prima facie* case for obviousness has not been presented.

Claims 1-4 were also rejected under 35 U.S.C § 103 as being unpatentable over Nomi (US 4,368,766) in view of Nowakowski (US 3,949,742).

Applicants respectfully submit that the examiner did not establish a *prima facie* case of obviousness under MPEP § 2142-2143. The same considerations stated above with regard to the Nomi-von Fragstein combination apply here. Even if we accept the Examiner's position (p 4, lines 14-18 of Office Action) that both the Nomi and the Nowakowski references are reasonably pertinent to the particular problem with which Applicants are concerned (a questionable assumption because the Nowakowski reference is directed to a synthetic skin dressing), what is also needed to establish a *prima facie* case of obviousness is a motivation to combine the two. The Examiner suggests that the motivation to substitute the non-porous backing layer of Nowakowski's laminate for Nomi's porous membrane stems from Nowakowski's teachings that his backing layer provides imperviousness to bacteria while still providing water vapor permeability. Applicants respectfully submit that the teachings of Nowakowski do not provide such a motivation, for the reasons explained below.

Nowakowski never states that his non-porous backing layer is superior to a microporous backing layer with respect to resistance to bacteria penetration. He does state (col 2, line 9-14) that his backing layer is superior to microporous backing layers (described in US 3,648,692) with respect to elasticity. Elasticity is certainly desirable for a wound dressing that needs to stretch and conform, but is irrelevant and possibly undesirable for a portable water container, thus it does not provide a motivation to combine the Nomi and Nowakowski references.

The wound dressings described in US 3,648,692, cited by Nowakowski, have essentially the same construction as Nowakowski's wound dressings, that is, they both consist of a laminate of a foam front layer and a film back layer. The difference is that the back layer of US 3,648,692 is microporous, whereas Nowakowski's back

layer is non-porous. Interestingly, US 3,648,692 states that the microporous back layer does provide resistance to bacteria penetration. Bacteria cannot travel across the tortuous path of a microporous membrane. It is only when microporous membranes become wet that they lose their imperviousness to bacteria. The microporous films of the wound dressings described in US 3,648,692, as well as the non-porous but breathable films of Nowakowski's wound dressings, are the back layers for an open cell foam layer which collects and retains liquid exudates. The back layer films are not directly exposed to liquids because they are not placed directly over exudating wounds, thus even microporous back layer films can provide resistance to bacteria penetration.

Nowakowski does mention a benefit of ether-based polyurethanes back layers regarding resistance to bacteria invasion, but only relative to ester-based polyurethanes (col 3, line 31-44). This is because the ester-based polyurethane is susceptible to hydrolysis and may lose its integrity due to hydrolytic degradation (col 3, line 31-44).

Again, Nowakowski does not state that non-porous back layers have an advantage over microporous back layers with respect to bacteria imperviousness. If he did, he would be making an inaccurate generalization because microporous membranes are actually very good barriers to bacteria when dry, evidence the fact that microporous membranes are extensively used commercially for packaging sterile medical products.

Nowakowski does not suggest the ability of his back layer film to exclude bacteria when wet, nor he suggests that the ability of his film to exclude bacteria when wet could be advantageously utilized to exclude bacteria from drinking water, nor he suggest that a cooling effect might be produced as a result of water transport through his film. Thus, there is no suggestion in the Nowakowski reference that

might lead the person skilled in the art to substitute Nowakowski's back layer film for Nomi's microporous membrane.

Another reason why the person skilled in the art would not be motivated to replace Nomi's microporous PTFE with Nowakowski's back layer film is that they transmit water by a totally different mechanism. Contrary to what the examiner states (p 5, line 13-14 of Office Action), Nomi's microporous PTFE does not have the ability to transmit water by a solution/ diffusion mechanism. The cooling effect produced by water transport through a microporous membrane of the type described by Nomi and the possibility to fabricate self-cooling containers from such materials has been previously recognized, not so for solution/diffusion membranes. There is no reference in Nowakowski to any type of container or any type of cooling.

Thus, there is no suggestion in the Nowakowski reference that might lead the person skilled in the art to combine the Nowakowski and the Nomi references in the manner suggested by the examiner. The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See MPEP 2143.01 (III). The desirability of the combination is not suggested. Such suggestion can only be derived from the hindsight knowledge of Applicants' own disclosure. The use of such hindsight knowledge to support an obviousness rejection under 35 USC §103 is impermissible. See *W L Gore and Assocs, Inc, v Garlock, Inc*, 721 F.2d 1553, 220 USPQ at 312-313.

Applicants therefore respectfully submit that there are no benefits suggested in Nowakowski (bacteria imperviousness or others) that might prompt the person skilled in the art to replace Nomi's microporous membrane with Nowakowski's non-porous membrane, and that a *prima facie* case for obviousness has not been presented.

Even assuming that a *prima facie* case for obviousness had been presented and that the Nomi and Nowakowski references could be combined in the manner suggested by the examiner, the combination most likely would not result in a portable container with the required cooling ability. Nowakowski does not define the permeability characteristics of his back layer film, but it appears from his description that his film may not be sufficiently permeable to function as a membrane for a self-cooling water container. For example, Nowakowski states that his back layer film is effectively an impermeable barrier and that body fluids are retained under the medical dressing (col 2, line 43-47). Furthermore, Nowakowski states that his dressing closely resembles a synthetic skin (col 7, line 10-13). Measurements of transepidermal water vapor diffusion (see, e.g., Baker, H. and Kligman, A., *Archives of Dermatology* 96, 441, 1967) have shown that human skin is a very effective barrier against diffusion of water vapor.

Applicants therefore respectfully submit that the combination of the Nomi and Nowakowski references does not support an obviousness rejection.

As further evidence of nonobviousness of the claimed invention, Applicants would like to bring to the Examiner's attention the secondary considerations of the *Graham v John Deere* test, namely the long felt need and failure of others. As outlined in MPEP § 716.04, the relevance of long-felt need and failure of others to the issue of obviousness depends on three factors: first, the need must have been a persistent one that was recognized by those of ordinary skill in the art, second, the long felt need must not have been satisfied by another before the invention by applicant, and third, the invention must in fact satisfy the long-felt need.

With regard to the first factor, the need for a portable water container capable of maintaining drinking water cool while assuring that the water is not affected by contaminants including bacteria has long been recognized, as evidenced by several patents on this topic going back to 1945.

With regard to the second factor, the long felt need has not been previously satisfied by prior art water containers utilizing evaporative cooling. Wenzel, US 2,467,792, utilizes a macroporous container that allows exudation of liquid water and fails to provide protection from contaminants that adhere to the wet outside surface.

Allenbach, US 2,865,420, attempts to solve the problem of contamination of the wet outside surface of a macroporous container by using a container design that is complex and impractical. Nomi, US 4,368,766, recognizes the problem of impurities collecting on the wet outside surface of macroporous containers (col 1, line 27-32) and discloses a microporous container that prevents adhesion of contaminants on the outside surface (col 1, line 58-59). Nomi's container, however, does not prevent bacteria access. Nomi lists specific advantages of his container (col 1, line 38-60), but excluding bacteria is not one of them. As explained on page 7 of this response, microporous membranes are not impervious to bacteria when wet, which is the case when a microporous container is filled with water. Luetsch, US 5,983,662, avoids the bacteria contamination problem using a standard can, but evaporative cooling requires that a layer of sponge be placed around the container and be kept wet. This is not a passive cooling system because water must frequently be added to the sponge to maintain the cooling effect.

With regard to the third factor, Applicants' invention does in fact satisfy the long-felt need for a self-cooling container impervious to contaminants, including bacteria and microbes.

Withdrawal of the obviousness rejections of claims 1-4 is therefore respectfully requested.

Application No. 10/710,636

Response to Office Action of January 3, 2007

Closing

The claims of the present application are believed by Applicants to be in condition for allowance and the Examiner's favorable consideration is respectfully requested. If the Examiner has any question that might easily be resolved by phone, he is invited to contact the Applicants at (847) 948-0392.

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Respectfully submitted,

/Serena Giori/

Serena Giori

2975 Orange Brace Rd

Riverwoods, IL 60015